Published Quarterly Volume 2, No. 1 - Spring 1975

# Environmental Conservation

The international Journal devoted to maintaining global viability through exposing and countering environmental deterioration resulting from human population pressure and unwise technology

Founded and Edited by NICHOLAS POLUNIN

Conferences & Reviews Dr M.A. Farid Editorial Assistant N.V.C. Polunin



Published by ELSEVIER SEQUOIA S.A. Lausanne

for the
FOUNDATION
FOR ENVIRONMENTAL
CONSERVATION



with the collaboration of the
International Union for Conservation of Nature
and Natural Resources (IUCN)
International Conferences
on Environmental Future (ICEF)
World Environment and Resources Council (W)

World Environment and Resources Council (WERC) and the support of World Wildlife Fund (WWF)

### **ENVIRONMENTAL CONSERVATION**

advocates timely action for the protection and amelioration of the environment of Man and Nature throughout the world: Topics range from pertinent case-histories of the past and present to rational use of resources, foreseeing ecological consequences, enlightened environmental policy, anti-pollution measures, low-impact development, environmental education and law, and ecologically sound management of all land and fresh water, sea and air, for the lasting future of Earth's fragile biosphere.

The following are the main types of contributions which may be accepted for publication in this Journal:

Survey articles on important aspects of its subject;

Research papers whether basic or 'confirmatory';

Case-history accounts of wide significance and interest;

Short Communications: reports, comments, news, notes;

Ecosystems for Conservation: examples from around the world;

Conferences & Meetings: summary reports; important prospects;

Reviews & Notices: of new books etc.

Founded and Edited by Nicholas Polunin

Conferences & Reviews: Dr M. A. Farid Editorial Assistant: N. V. C. Polunin

### **ADVISORY EDITORS**

AFRICAN DEVELOPMENTS: Prof. Mohammed Kassas (Cairo, Egypt)
ANIMAL ECOLOGY: Dr Raymond F. Dasmann (Morges, Switzerland)
ANIMAL IMPACT: Prof. Jean Dorst (Paris, France)

AUSTRALASIA: Dr Donald F. McMichael (Canberra City, Australia)
BIOLOGICAL PRODUCTIVITY: Dr E. Barton Worthington (London,

England)
BIOSPHERE MAINTENANCE: Hon. Beatrice E. Willard (Washington, D.C.)
ECONOMIC ASPECTS: Prof. Marshall I. Goldman (Cambridge, Mass.)
ECOSYSTEMS RESEARCH: Prof. Heinz H. Ellenberg (Göttingen, West

EDUCATION AND TRAINING: Prof. L. K. Shaposhnikov (Vilar nr Moscow, U.S.S.R.)

ENGINEERING AND TRANSPORT: Prof. John F. Coales (Cambridge, England)

FRESH WATERS: Prof. W. Thomas Edmondson (Seattle, Washington)

GEOGRAPHICAL ASPECTS: Prof. Gilbert F. White (Boulder, Colorado)
HUMAN REACTIONS: Dr Thomas Adeoye Lambo (Geneva, Switzerland)
HUMAN SETTIEMENTS: Prof. Constantings A. Davidio (Athons

HUMAN SETTLEMENTS: Prof. Constantinos A. Doxiadis (Athens, Greece)

INDIAN SUB-CONTINENT: Dr Jai Kishan Maheshwari (Calcutta, India) I.C.E.F.: vacant owing to death of Prof. Baer

ISLAND ECOSYSTEMS: Dr F. Raymond Fosberg (Washington, D.C.) I.U.C.N.: Frank G. Nicholls (Morges, Switzerland)

LAND USE AND RECOVERY: Dr Duncan Poore (Morges, Switzerland)

LATIN AMERICA: Dr José C. de Melo Carvalho (Rio de Janeiro, Brazil) LAW AND ENFORCEMENT: Prof. Homer G. Angelo (Davis, California) MARINE WATERS: Dr G. Carleton Ray (Baltimore, Maryland)

METEOROLOGY AND CLIMATOLOGY: Prof. Reid A. Bryson (Madison, Wisconsin)

MICROBIOLOGICAL IMPLICATIONS: Prof. René Dubos (New York, N.Y.)
PARKS AND RESERVES: Prof. Jean-Paul Harroy (Bruxelles, Belgium)
PESTICIDES AND TOXICANTS: Dr Norman W. Moore (London, England)

PLANT ECOLOGY: Prof. Makoto Numata (Chiba, Japan)

PHYSICS AND ENERGY: Dr Amasa S. Bishop (Geneva, Switzerland)
POLLUTANTS AND DISPOSAL: Prof. Kenneth Mellanby (Abbots Ripton, England)

POPULATION IMPACT: Prof. Paul R. Ehrlich (Stanford, California)

RESOURCES CONSERVATION: Prof. S. Fred Singer (Charlottesville, Virginia)

SOCIAL SCIENCES: Prof. Lynton K. Caldwell (Bloomington, Indiana)
SOILS AND EROSION: Prof. Victor A. Kovda (Puschino-on-Oka &
Moscow, U.S.S.R.)

SOUTH-EAST ASIA: Prof. Otto Soemarwoto (Bandung, Indonesia) TOURISM AND RECREATION: Dr Michael B. Usher (York, England) U.N.E.P.: Dr Kai Curry-Lindahl (Nairobi, Kenya)

W.W.F.: Dr Luc Hoffmann (Morges, Switzerland)

### SUBMISSION OF MANUSCRIPTS

All contributions must be in precise English and original, submission of a 'manuscript' implying that it is unpublished and is not being considered contemporaneously for publication elsewhere. Manuscripts (two copies, including one on airmail paper) and allied materials should be sent to:

Prof. Dr Nicholas Polunin, Editor ENVIRONMENTAL CONSERVATION 15 Chemin F.-Lehmann 1218 Grand-Saconnex Geneva, Switzerland,

or to one of the above Advisory Editors. There is a set of Instructions for Authors at the end of each issue; failure to follow these in reasonable degree may lead to return of a manuscript for restyling before it can be considered or even refereed.

### **PUBLISHING AND SUBSCRIPTION INFORMATION**

Environmental Conservation is published by Elsevier Sequoia S.A., Lausanne, for the Foundation for Environmental Conservation, with the collaboration of the International Union for Conservation of Nature and Natural Resources (IUCN), International Conferences on Environmental Future (ICEF), World Environment and Resources Council (WERC), and others, and the support of World Wildlife Fund (WWF). It is covered in about twelve international contents and abstracting journals emanating from Great Britain, the United States, Italy, and West Germany.

Environmental Conservation is published quarterly. Size  $28 \times 20$  cm, about 320 pages of text per annum, which it is hoped soon to extend. The subscription price for 1975 is SFrs 120 (including postage).

Subscription orders and enquiries should be sent to:

ENVIRONMENTAL CONSERVATION Elsevier Sequoia S.A. P.O. Box 851

# Environmental Conservation

Founded and Edited by

## NICHOLAS POLUNIN

(Geneva, Switzerland)

Volume 2, 1975

Published for

THE FOUNDATION FOR ENVIRONMENTAL CONSERVATION
(non-profit)
by
Elsevier Sequoia SA, P.O. Box 851, 1001 Lausanne 1, Switzerland